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S4       3242   (NASAL? OR INTRANASAL? OR NOSE) AND IMMUNE AND RESPONSE AND
              SYSTEMIC
S5         33   S2 AND PY<1999
S6     452767   NASAL? OR INTRANASAL? OR NOSE
S7      18093   S6 AND (ANTIBD? OR IMMUNOGLOB?)
S8       5705   S7 AND LEVEL?
S9       2330   S8 AND IGG
S10       988   RD S9 (unique items)
S11       517   S10 AND PY<1999
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0011644507 BIOSIS NO.: 199800438754

Systemic and mucosal immune responses of mice to aluminium-adsorbed or aluminium-non-adsorbed tetanus toxoid administered **intranasally** with recombinant cholera toxin B subunit

AUTHOR: Isaka Masanori; Yasuda Yoko; Kazuka Satoshi; Miura Yutaka; Taniguchi Tooru; Matano Keiko; Goto Norihisa; Tochikubo Kunio (Reprint)
AUTHOR ADDRESS: Dep. Microbiol., Nagoya City Univ. Med. Sch., Mizuho-ku, Nagoya 467-8601, Japan**Japan

JOURNAL: Vaccine 16 (17): p1620-1626 Oct., 1998 ***1998***
MEDIUM: print
ISSN: 0264-410X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: For the purpose of changing the immunization procedure of tetanus toxoid from intramuscular or subcutaneous injection, which has been in practice for a long time, to **intranasal** administration, we examined **systemic** and mucosal immune responses of mice to aluminium-adsorbed tetanus toxoid (aTT) and aluminium-non-adsorbed tetanus toxoid (nTT) inoculated **intranasally** with recombinant cholera toxin B subunit (rCTB). ***Intranasal*** immunization with aTT induced, at a concentration of 0.5 Lf, high ***levels*** of TT-specific serum ***IgG*** antibody titers and moderate **levels** of TT-specific serum IgA antibody titers in the presence and absence of rCTB. Induction of high or moderate **levels** of mucosal TT-specific IgA antibody responses was observed with and without rCTB in the lung, the **nasal** cavity, the small and large intestines and the vagina. Generally speaking, the co-administration of aTT and rCTB showed higher mucosal TT-specific IgA antibody titers when compared with the administration of aTT alone. In case of **intranasal** administration of nTT, the dose of 5 Lf was necessary and stimulated, only in the presence of rCTB (10 mug), high **levels** of tetanus toxid (TT)-specific serum **IgG** antibody responses in all mice examined and moderate or slight **levels** of TT-specific IgA antibody responses in the **nasal**, pulmonary and small and large intestinal lavages of a few mice. All mice **intranasally** immunized with aTT alone or nTT and rCTB escaped onset of tetanus. This is the first report concerned with the mucosal adjuvant activity of an aluminium compound Judging from these results, **intranasal** administration of aTT with and without rCTB or nTT with rCTB appears to be a very useful means for a vaccination against tetanus with respect to ease, safety, certainty, low cost and no need for an injection needle.

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exposure. Efficacy correlated with the induction of high serum **levels** of anti-SEB **IgG**. In contrast, **intranasal** or i.m. immunization with toxoid in saline without proteosomes was not significantly protective in either challenge model. Proteosome-toxoid plus alum given i.m. also elicited more significant protection against respiratory challenge than the alum-adjuvanted toxoid alone. The capacity of proteosomes to enhance both i.m. and **intranasal** immunogenicity and efficacy of SEB toxoid indicates that testing such proteosome-SEB toxoid vaccines in the nonhuman primate aerosol challenge model of SEB intoxication prior to immunogenicity trials in humans is warranted. These data expand the applicability of the proteosome mucosal vaccine delivery system to protein toxoids and suggest that respiratory delivery of proteosome vaccines may be practical for enhancement of both mucosal and **systemic** immunity against toxic or infectious diseases.

16/7/16 (Item 16 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0010260534 BIOSIS NO.: 199698728367
Induction of antigen-specific antibodies in vaginal secretions by using a nontoxic mutant of heat-labile enterotoxin as a mucosal adjuvant
AUTHOR: Di Tommaso Annalisa; Saletti Giulietta; Pizza Mariagrazia; Rappuoli Rino; Dougan Gordon; Brignani Sergio; Douce Gill; De Magistris Maria Teresa (Reprint)
AUTHOR ADDRESS: IRIS, Via Fiorentina, 1, 53100 Siena, Italy**Italy
JOURNAL: Infection and Immunity 64 (3): p974-979 1996 **1996**
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Immunization of the female reproductive tract is important for protection against sexually transmitted diseases and other pathogens of the reproductive tract. However, intravaginal immunization with soluble antigens generally does not induce high **levels** of secretory **immunoglobulin** A (IgA). We recently developed safe mucosal adjuvants by genetically detoxifying Escherichia coli heat-labile enterotoxin, a molecule with a strong mucosal adjuvant activity, and here we describe the use of the nontoxic mutant LTK63 to induce a response in the mouse vagina against ovalbumin (Ova). We compared intravaginal and **intranasal** routes of immunization for induction of **systemic** and vaginal responses against LTK63 and Ova. We found that LTK63 is a potent mucosal immunogen when given by either the intravaginal or **intranasal** route. It induces a strong **systemic** antibody response and **IgG** and long-lasting IgA in the vagina. The appearance of vaginal IgA is delayed in the **intranasally** immunized mice, but the **levels** of vaginal anti-LTK63 IgA after repeated immunizations are higher in the **intranasally** immunized mice than in the intravaginally immunized mice. LTK63 also acts as a mucosal adjuvant, inducing a serum response against Ova, when given by both the intravaginal and **intranasal** routes. However, vaginal IgA against Ova is stimulated more efficiently when LTK63 and antigen are given **intranasally**. In conclusion, our results demonstrate that LTK63 can be used as a mucosal adjuvant to induce antigen-specific antibodies in vaginal secretions and show that the **intranasal** route of immunization is the most effective for this purpose.

Intranasal Strong Systemic Ab Response

16/7/17 (Item 17 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0009892156 BIOSIS NO.: 199598359989

adjuvants
Strong systemic response

Cholera toxin B stimulates **systemic** neutralizing antibodies after **intranasal** co-immunization with measles virus
AUTHOR: Muller Claude P (Reprint); Beauverger Philippe; Schneider Francois; Jung Guenther; Brons Nicolaas H C
AUTHOR ADDRESS: Laboratoire National Sante, P.O. Box 1102, L-1011 Luxembourg, Luxembourg**Luxembourg
JOURNAL: Journal of General Virology 76 (6): p1371-1380 1995 **1995**
ISSN: 0022-1317
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: An efficient mucosal vaccination has a number of obvious advantages over invasive routes of immunization. The immune response to measles virus (MV) was investigated after **intranasal** and intragastric coimmunization of mice with cholera toxin B (CTB) as an adjuvant. High titers of virus-specific **IgG** antibodies and a transient IgA response were detected in the sera after **intranasal** but not after intragastric immunization when CTB was used. In the presence of CTB, higher titers were reached with less antigen and fewer **intranasal** boosts. Neutralizing antibodies were found in all animals only after co-immunization with MV and CTB. In the **nasal** wash and the saliva, **IgG** and IgA titers were significant only in the MV plus CTB groups; **IgG levels** were comparable to those found after intraperitoneal (i.p.) immunization with complete Freund's adjuvant. Specific IgA was detected in the mucosal fluids only after **intranasal** immunization with MV plus CTB but not after i.p. or intragastric immunization. The antibody response consisted of 99% IgG1 after MV immunization. In the CTB groups 10% IgG2b and 1% IgG2a were detected in addition to the predominant IgG1 antibodies.

16/7/18 (Item 18 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0009818402 BIOSIS NO.: 199598286235
Immune responses and protection against Bordetella pertussis infection after **intranasal** immunization of mice with filamentous haemagglutinin in solution or incorporated in biodegradable microparticles
AUTHOR: Cahill E S; O'Hagan D T; Illum L; Barnard A; Mills K H G; Redhead K (Reprint)
AUTHOR ADDRESS: Div. Bacteriol., Natl. Inst. Biological Standards Control, South Mimms, Potter Bar, UK**UK
JOURNAL: Vaccine 13 (5): p455-462 1995 **1995**
ISSN: 0264-410X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The **intranasal** (i.n.) immunization of mice with Bordetella pertussis filamentous haemagglutinin (FHA) either as a solution or incorporated in biodegradable microparticles induced very similar immune responses. Both resulted in strong **systemic IgG** responses to FHA and good **levels** of anti-FHA **IgG** and IgA in the lungs of immunized mice. In comparison, the intraperitoneal (i.p.) immunization of mice with as measured by immunosorbent assay, were shown to correlate with their functional antigen-specific spleen cell proliferation and IL-2 secretion indicative of a Th1 type response, however, cells from i.p. immunized mice only secreted low **levels** of IL-5. All three methods of FHA immunization provided mice with significant protection against subsequent aerosol challenge with virulent B. pertussis. Mice which had been immunized intra-**nasally** eliminated the bacteria from their lungs slightly more rapidly than i.p. immunized mice, demonstrating the

property of M protein and promoted phagocytosis. Protection by sIgA occurred despite the lower immunoreactivity of sIgA to purified M protein compared with serum Ig. The data suggest that sIgA can protect at the mucosa and may preclude the need for opsonic **IgG** in preventing streptococcal infection.

16/7/33 (Item 33 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0006194284 BIOSIS NO.: 198886034205
MODULATION OF **SYSTEMIC** AND MUCOSAL IMMUNE RESPONSES TO INHALED RAGWEED ANTIGEN IN EXPERIMENTALLY INDUCED INFECTION WITH RESPIRATORY SYNCYTIAL VIRUS IMPLICATION IN VIRALLY INDUCED ALLERGY
AUTHOR: LEIBOVITZ E (Reprint); FREIHORST J; PIEDRA P A; OGRA P L
AUTHOR ADDRESS: DIV INFECTIOUS DISEASES, CHILDREN'S HOSP, 219 BRYANT STREET, BUFFALO, NY 14222, USA**USA
JOURNAL: International Archives of Allergy and Applied Immunology 86 (1): p112-116 **1988**
ISSN: 0020-5915
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Groups of BALB/c mice were either sham-infected or infected **intranasally** with respiratory syncytial virus (RSV). On the third day following **intranasal** inoculation, all groups of mice were exposed by inhalation to ragweed antigen for 5 consecutive days and rechallenged with ragweed on day 31. Development of antibody activity to ragweed antigen was examined in serum and bronchial washings at regular intervals employing an ELISA assay for **IgG** and IgA antibody activity and passive cutaneous anaphylaxis for IgE-specific responses. The serum **IgG** and IgE antibody response to ragweed following primary exposure developed at significantly higher **levels** in mice previously infected with RSV, compared to sham-infected controls. In addition, an earlier rise in serum IgE response to ragweed occurred in the RSV-infected animals. **IgG** and IgA anti-ragweed antibody activity in bronchial washings was also observed with significantly higher **levels** in the RSV-infected animals when compared to the controls, although a similar increase in antigen-specific IgE activity in bronchial washings was found in both groups of animals. These findings support the possibility that mucosally restricted virus infections of the respiratory tract may enhance the development of sensitization and the magnitude of antibody responses to other inhaled allergens found concomitantly in the respiratory tract during acute infection.

16/7/34 (Item 34 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0005256085 BIOSIS NO.: 198682102472
SEASONAL VARIATIONS IN MATERNAL SERUM AND MAMMARY IMMUNITY TO RESPIRATORY SYNCYTIAL VIRUS
AUTHOR: NANDAPALAN N (Reprint); TAYLOR C E; GREENWELL J; SCOTT M; SCOTT R; HEY E N; TOMS G L
AUTHOR ADDRESS: DEPARTMENT OF VIROLOGY, THE UNIVERSITY OF NEWCASTLE, NEWCASTLE UPON TYNE, NE2 4HH, ENGLAND, UK**UK
JOURNAL: Journal of Medical Virology 20 (1): p79-88 **1986**
ISSN: 0146-6615
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

cell-mediated immunity in vivo as indicated by the induction of delayed-type hypersensitivity. Therefore, **intranasal** immunization with hybrid HIV peptides provides a noninvasive route of immunization that induces both long-lived **systemic** and mucosal Ab responses as well as cell-mediated immunity to HIV.

16/7/50 (Item 7 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04700725 Genuine Article#: TX566 Number of References: 26
Title: INDUCTION OF ANTIGEN-SPECIFIC ANTIBODIES IN VAGINAL SECRETIONS BY USING A NONTOXIC MUTANT OF HSAI-LABILE ENTEROTOXIN AS A MUCOSAL ADJUVANT
Author(s): DITOMMASO A; SALETTI G; PIZZA M; RAPPUOLI R; DOUGAN G; ABRIGNANI S; DOUCE G; DEMAGISTRIS M
Corporate Source: IRIS,VIA FIORENTINA 1/I-53100 SIENA//ITALY/; IRIS/I-53100 SIENA//ITALY/; UNIV LONDON IMPERIAL COLL SCI TECHNOL & MED,DEPT BIOCHEM/LONDON//ENGLAND/
Journal: INFECTION AND IMMUNITY, **1996**, V64, N3 (MAR), P974-979
ISSN: 0019-9567
Language: ENGLISH Document Type: ARTICLE
Abstract: Immunization of the female reproductive tract is important for protection against sexually transmitted diseases and other pathogens of tile reproductive tract, However, intravaginal immunization with soluble antigens generally does not induce high **levels** of secretory **immunoglobulin** A (IgA). We recently developed safe mucosal adjuvants by genetically detoxifying Escherichia coli heat-labile enterotoxin, a molecule with a strong mucosal adjuvant activity, and here we describe the use of the nontoxic mutant LTK63 to induce a response in the mouse vagina against ovalbumin (Ova). The compared intravaginal and **intranasal** routes of immunization for induction of **systemic** and vaginal responses against LTK63 and Ova. We found that LTK63 is a potent mucosal immunogen when given by either the intravaginal or **intranasal** route. It induces a strong **systemic** antibody response and **IgG** and long-lasting IgA in the vagina. The appearance of vaginal IgA is delayed in the **intranasally** immunized mice, hut the **levels** of vaginal anti-LTK63 IgA after repeated immunizations a:re higher in the **intranasally** immunized mise than in the intravaginally immunized mice, LTK63 also acts as a mucosal adjuvant, inducing a serum response against Ova, when given by both the intravaginal and **intranasal** routes. However, vaginal IgA against Ova is stimulated more efficiently when LTK63 and antigen ape given **intranasally**, in conclusion, our results demonstrate that LTK63 call be used as a mucosal adjuvant to induce antigen-specific antibodies in vaginal secretions and show that the **intranasal** route of immunization is the most effective for this purpose.

16/7/51 (Item 8 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03431777 Genuine Article#: PF189 Number of References: 42
Title: PRIMARY BILIARY-CIRRHOSIS - HIGH PROPORTIONS OF B-CELLS IN BLOOD AND LIVER-TISSUE PRODUCE ANTIMITOCHONDRIAL ANTIBODIES OF SEVERAL IG CLASSES
Author(s): BJORKLAND A; LOOF L; MENDELHARTVIG I; TOTTERMAN TH
Corporate Source: UNIV UPPSALA HOSP,DEPT CLIN IMMUNOL & TRANSFUS MED/S-75185 UPPSALA//SWEDEN/; UNIV UPPSALA HOSP,DEPT CLIN IMMUNOL & TRANSFUS MED/S-75185 UPPSALA//SWEDEN/; UNIV UPPSALA HOSP,DEPT MED/UPPSALA//SWEDEN/
Journal: JOURNAL OF IMMUNOLOGY, **1994**, V153, N6 (SEP 15), P2750-2757
ISSN: 0022-1767

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S3         60   RD S2 (unique items)
S4       3242   (NASAL? OR INTRANASAL? OR NOSE) AND IMMUNE AND RESPONSE AND
              SYSTEMIC
S5         33   S2 AND PY<1999
S6     452767   NASAL? OR INTRANASAL? OR NOSE
S7      18093   S6 AND (ANTIBD? OR IMMUNOGLOB?)
S8       5705   S7 AND LEVEL?
S9       2330   S8 AND IGG
S10       988   RD S9 (unique items)
S11       517   S10 AND PY<1999
S12         7   S11 AND TH1 AND TH2
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 11/7/1     (Item 1 from file: 5)
DIALOG(R)File   5:Biosis Previews(R)
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0011793749   BIOSIS NO.: 199900053409
Intranasal immunization with Yersinia enterocolitica O:8 cellular
  extract protects against local challenge infection
AUTHOR: Di Genaro Maria Silvia; Escudero Maria Esther; Munoz Estela;
  Aguilera Claudia; Scardapane Luis; Stefanini De Guzman Ana Maria
  (Reprint)
AUTHOR ADDRESS: Chacabuco y Pedernera, 5700 San Luis, Argentina**Argentina
JOURNAL: Microbiology and Immunology  42 (11): p781-788 1998 1998
MEDIUM: print
ISSN: 0385-5600
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Yersinia enterocolitica is enteropathogenic for humans and
  rodents. Immune protection from oral and respiratory pathogens may be
  most effectively elicited following intranasal (i.n.) vaccination.
  An experimental murine intranasal challenge model was used to
  evaluate the immunogenicity of a Y. enterocolitica O:8 cellular extract
  (CE) in mucosa. This antigenic preparation has demonstrated to induce
  protection by subcutaneous immunization. Mice were immunized
  intranasally with two doses of CE. Immunized and nonimmunized
  animals were challenged with 5 X 106 colony-forming units (CFU) by
  nasal infection. Antibodies in serum and bronchoalveolar lavage
  (b.a.l) fluid were assessed before and 48 hr after challenge. The CFU
  were determined by analysis of lung homogenate samples. The CE
  immunization induced significant b.a.l.-specific IgA and IgG, and
  serum-specific IgG, IgA and IgM. Histopathological studies 24 and
  48 hr postchallenge demonstrated that immunization protected against
  progressive lesions resulting from Y. enterocolitica invasion of the
  pulmonary mucosa. The CFU in the lungs showed that CE immunization led to
  significant clearance as compared to the bacterial level in
  nonimmunized controls. From the results obtained, it can be concluded
  that CE can induce local and systemic immunity and protect against
  nasal infection.


 11/7/2     (Item 2 from file: 5)
DIALOG(R)File   5:Biosis Previews(R)
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0011771979   BIOSIS NO.: 199900031639
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immunoglobulin A (IgA) antibody responses to OMVs in **nasal** secretions, and eight developed salivary IgA antibodies which persisted for at least 5 months. Intramuscular immunizations did not lead to antibody responses in the secretions. Modest increases in serum **IgG** antibodies were obtained in 5 volunteers who had been immunized **intranasally**, while 10 individuals responded strongly to the intramuscular vaccine. Both the serum and secretory antibody responses reached a maximum after two to three doses of the **nasal** vaccine, with no significant booster effect of the fifth dose. The pattern of serum antibody specificities against the different OMV components after **intranasal** immunizations was largely similar to that obtained with the intramuscular vaccine. Five and eight vaccinees in the **nasal** group developed persistent increases in serum bactericidal titers to the homologous meningococcal vaccine strain expressing low and high **levels**, respectively, of the outer membrane protein Opc. Our results indicate that meningococcal OMVs possess the structures necessary to initiate **systemic** as well as local mucosal immune responses when presented as a **nasal** vaccine. Although the serum antibody **levels** were less conspicuous than those after intramuscular vaccinations, the demonstration of substantial bactericidal activity indicates that a nonproliferating **nasal** vaccine might induce antibodies of high functional quality.

16/7/13 (Item 13 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0010790317 BIOSIS NO.: 199799424377
Lupus vulgaris in a patient with **systemic** lupus erythematosus and persistent **IgG** deficiency
AUTHOR: Duzgun N (Reprint); Duman M; Sonel B; Peksari Y; Erdem C; Tokgoz G
AUTHOR ADDRESS: Dedekorkut Sokak 22/5 A, Ayranci, 06690 Ankara, Turkey** Turkey
JOURNAL: Rheumatology International 16 (5): p213-216 1997 **1997**
ISSN: 0172-8172
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We present the case of a patient with juvenile onset **systemic** lupus erythematosus (SLE) who developed a persistent, acquired hypogammaglobulinaemia with **IgG** deficiency. The hypogammaglobulinaemia was probably a complication of high dose corticosteroid treatment. The serum **IgG level** remained subnormal despite intravenous **immunoglobulin** therapy. Lupus vulgaris, which developed on the **nasal** cartilage in this patient with SLE, is not an expected finding. This patient is probably the first reported case of SLE associated with lupus vulgaris.

16/7/14 (Item 14 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0010372189 BIOSIS NO.: 199699006249
Mucosal immunogenicity of the Escherichia coli heat-labile enterotoxin: role of the A subunit
AUTHOR: De Haan Lolke; Holtrop Marijke; Verweij Willem R; Agsteribbe Etienne; Wilschut Jan (Reprint)
AUTHOR ADDRESS: Dep. Physiol. Chem., Groningen Inst. Drug Studies (GIDS), University Groningen, Bloemsingel 10, 9712 KZ Groningen, Netherlands** Netherlands
JOURNAL: Vaccine 14 (4): p260-266 1996 **1996**
ISSN: 0264-410X

DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The Escherichia coli heat-labile enterotoxin (LT) is a potent mucosal immunogen, inducing high secretory as well as **systemic** antibody responses upon oral or **intranasal** (i.n.) administration. In addition, LT has the capacity to act as an adjuvant in antibody responses against coadministered other antigens. To investigate the role of the individual subunits of LT in the mucosal immunogenicity and adjuvanticity of LT, the LT holotoxin and the non-toxic B subunit (LTB) were cloned separately and purified from overproducing E. coli cultures. Mice were immunized i.n. with the recombinant LT, LTB and combinations of the two and the induction of LTB-specific serum **IgG** and IgA as well as mucosal S-IgA was monitored. **Intranasal** administration of 2 mu-g LTB by itself induced a moderate **systemic** and a low mucosal antibody response, the latter being restricted to the site of immunization. However, addition of a trace amount (50 ng) of LT holotoxin to LTB strongly stimulated both serum antibody and mucosal S-IgA responses to LTB: the antibody **levels** induced by 2 mu-g LTB supplemented with 50 ng LT were similar to those seen after immunization with 2.9 mu-g of the LT holotoxin alone (representing an amount of 2 mu-g LTB). Furthermore, immunization with LT-supplemented LTB or with LT holotoxin alone, but not immunization with LTB alone, induced an S-IgA response in distant mucosal tissues including the lung, intestine and the urogenital system. Nicking of the LTA chain with trypsin did not enhance the immunogenicity of LT. These results indicate that, although the LTA chain plays an important role in the mucosal immunogenicity of LT including priming of the common mucosal immune system, extremely low amounts of the LT holotoxin suffice for the induction of high antibody responses to LTB, the trace LT and LTB acting in a synergistic fashion.

16/7/15 (Item 15 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0010356698 BIOSIS NO.: 199698824531
Intranasal and intramuscular proteosome-staphylococcal enterotoxin B (SEB) toxoid vaccines: Immunogenicity and efficacy against lethal SEB intoxication in mice
AUTHOR: Lowell George H (Reprint); Kaminski Robert W; Grate Steven; Hunt Robert E; Charney Colleen; Zimmer Shanta; Colleton Curtis
AUTHOR ADDRESS: Intellivax, Inc., 6303 Western Run Dr., Baltimore, MD 21215, USA**USA
JOURNAL: Infection and Immunity 64 (5): p1706-1713 1996 **1996**
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: **Intranasal** or intramuscular (i.m.) immunization of mice and i.m. immunization of rabbits with formalinized staphylococcal enterotoxin B (SEB) toxoid in saline elicited higher anti-SEB serum **immunoglobulin** G (**IgG**) titers when the toxoid was formulated with proteosomes. In addition, **intranasal** immunization of mice with this proteosome-toxoid vaccine elicited high **levels** of anti-SEB IgA in lung and intestinal secretions, whereas the toxoid without proteosomes did not. Two i.m. immunizations with proteosome-toxoid plus alum also induced higher murine serum responses than alum-adjuvanted toxoid without proteosomes. Furthermore, proteosometoxoid delivered **intranasally** in saline or i.m. with either saline or alum afforded significant protection against lethal SEB challenge in two D-galactosamine-sensitized murine models of SEB intoxication, i.e., the previously described i.m. challenge model and a new respiratory challenge model of mucosal SEB

circumvent the risk of anaphylaxis, and the use of adjuvants such as IL-12 or mycobacterial vaccines to potentiate the effects of allergen in inducing immune deviation.

12/7/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0011501492 BIOSIS NO.: 199800295739
Decrease of allergen-specific T-cell response induced by local **nasal** immunotherapy
AUTHOR: Giannarini L; Maggi E (Reprint)
AUTHOR ADDRESS: Clin. Immunol. Dep., Ist. Med. Interna e Immunoallergol., Univ. Firenze, Policlinico Careggi, Viale Morgagni 85, 50134 Firenze, Italy**Italy
JOURNAL: Clinical and Experimental Allergy 28 (4): p404-412 April, 1998
1998
MEDIUM: print
ISSN: 0954-7894
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: The clinical efficacy and safety of local **nasal** immunotherapy (LNIT) with lyophilized 'macronized' powder has been demonstrated. However, the immunological changes possibly induced by LNIT which may account for the clinical improvement are still unclear. Objective: To investigate the effects of a successful LNIT-treatment on the allergen-driven T cell response, cytokine secretion and IgE and **IgG** antibody production. Methods: Three groups (untreated, subcutaneous immunotherapy- SIT- and LNIT-treated) of grass-sensitive patients suffering from seasonal rhinitic symptoms were randomized for the 2-year study. The proliferative response of PBMC to purified Rye-1 allergen and serum **levels** of grass-specific IgE and **IgG** were evaluated before treatment and during the 2-year subsequent pollination periods. The proliferative response of allergen-specific short-term T-cell lines, as well as production of allergen-driven cytokine by PBMC, were also assessed. Results: Both SIT and LNIT induced a significant reduction of symptom scores during the pollination season. SIT, but not LNIT, induced a significant change in serum **levels** of allergen-specific IgE and **IgG** antibody. By contrast, both SIT and LNIT reduced the increase of the proliferative response of allergen-specific T cells driven by natural allergen exposure and significantly decreased T cell proliferation to low doses of allergen, as shown also by the mitogenic index of allergen-specific T-cell lines. A reduced IL-4 and IFNgamma production by PBMC of LNIT- and SIT-treated patients was also observed in the absence of a clearcut **TH2-TH1** switch. Conclusions: These data suggest that a common mechanism of both LNIT and SIT is the induction of T-cell tolerance, thus providing a rational basis to explain why LNIT may be clinically successful in allergic patients with rhinitis.

12/7/3 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0010869643 BIOSIS NO.: 199799503703
Mucosal immunogenicity of a recombinant Salmonella typhimurium-cloned heterologous antigen in the absence or presence of coexpressed cholera toxin A2 and B subunits
AUTHOR: Harokopakis Evlambia; Hajishengallis George; Greenway Terrence E; Russell Michael W; Michalek Suzanne M (Reprint)
AUTHOR ADDRESS: Univ. Alabama at Birmingham, Dep. Microbiol., 845 19th St.

South, BBRB 258/5, Birmingham, AL 35294-2170, USA**USA
JOURNAL: Infection and Immunity 65 (4): p1445-1454 1997 **1997**
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: An avirulent Salmonella typhimurium vaccine strain expressing a streptococcal protein adhesin and a similar clone which produces the same streptococcal antigen linked to the cholera toxin (CT) A2 and B subunits (CTA2/B) were compared for the ability to induce antibody responses to the expressed heterologous antigen after oral or **intranasal** immunization of mice. Expression of cloned immunogens in these systems is temperature regulated, being optimal at 37 degree C, and the two clones under comparison were shown to produce similar **levels** of the streptococcal antigen. Both clones were found to stimulate high **levels** of serum **immunoglobulin** G (**IgG**) and mucosal IgA antibodies to the cloned immunogen. A consistent trend was observed toward higher mucosal IgA but lower serum **IgG** responses in the case of the S. typhimurium vector that coexpressed CTA2/B, a potential mucosal adjuvant, regardless of the route of administration. Also noteworthy was the capacity of these antigen delivery systems to induce anamnestic systemic and secretory responses to the cloned immunogen 15 weeks after the primary immunization, despite preexisting immunity to the Salmonella vectors. These antibody responses were sustained for at least 7 months following the booster immunization, at which time the secretory IgA antibody **levels** were significantly higher in mice given the Salmonella clone that coexpressed CTA2/B. Although the serum **IgG** response against the Salmonella vector was characterized by a high IgG2a/IgG1 ratio (indicative of the T helper type 1 (**Th1**)/**Th2** profile), a mixed IgG1 and IgG2a pattern was observed for the carried heterologous antigen, which displayed a dominant IgG1 response when administered as a purified immunogen. Our findings indicate that the recombinant streptococcal antigen and CTA2/B are strong immunogens when expressed by the antigen delivery system used in this study and suggest that CTA2/B may have an additional immunoenhancing activity in the mucosal compartment besides its ability to target antigen uptake into the mucosal inductive sites. CTA2/B may thus be useful as an S. typhimurium-cloned adjuvant for coexpressed protein antigens.

12/7/4 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05695226 Genuine Article#: WQ613 Number of References: 49
Title: Aeroallergen-induced eosinophilic inflammation, lung damage, and airways hyperreactivity in mice can occur independently of IL-4 and allergen-specific **immunoglobulins**
Author(s): Hogan SP; Mould A; Kikutani H; Ramsay AJ; Foster PS (REPRINT)
Corporate Source: AUSTRALIAN NATL UNIV,JOHN CURTIN SCH MED RES, DIV BIOCHEM & MOL BIOL/CANBERRA/ACT 0200/AUSTRALIA/ (REPRINT); AUSTRALIAN NATL UNIV,JOHN CURTIN SCH MED RES, DIV BIOCHEM & MOL BIOL/CANBERRA/ACT 0200/AUSTRALIA/; AUSTRALIAN NATL UNIV,JOHN CURTIN SCH MED RES, DIV CELL BIOL & IMMUNOL/CANBERRA/ACT 0200/AUSTRALIA/; OSAKA UNIV,INST MOL & CELLULAR BIOL/OSAKA 565//JAPAN/
Journal: JOURNAL OF CLINICAL INVESTIGATION, **1997**, V99, N6 (MAR 15), P 1329-1339
ISSN: 0021-9738 Publication date: 19970315
Publisher: ROCKEFELLER UNIV PRESS, 1114 FIRST AVE, 4TH FL, NEW YORK, NY 10021
Language: English Document Type: ARTICLE
Abstract: In this investigation we have used a mouse model containing certain phenotypic characteristics consistent with asthma and IL-4- and CD40-deficient mice to establish the role of this cytokine and

antigens by either s.c. or i.n. administration. Following vaccination, each group received an i.n. challenge of P. multocida. Rabbits vaccinated with both antigens i.n. or s.c. had a 100% survival rate, few or no bacteria in the liver and lungs, high serum **immunoglobulin** G (**IgG**) and IgM antibody titers, and significant numbers of **IgG** antibody-secreting cells (ASC) in the spleen and tracheobronchial lymph node. Rabbits vaccinated i.n. had significant **nasal** and bronchoalveolar lavage IgA antibody **levels**. Rabbits vaccinated with only one antigen, either PMT or CN, had lower antibody titers, moderate to severe liver and lung infections, and fewer ASC compared to rabbits receiving both antigens. Rabbits in the control groups had moderate to severe liver and lung infections. This study indicates that i.n. immunization with both PMT and CN induces an effective response against homologous P. multocida challenge.

16/7/10 (Item 10 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0011569874 BIOSIS NO.: 199800364121
Mucosal immunogenicity of genetically detoxified derivatives of heat labile toxin from Escherichia coli
AUTHOR: Douce Gill; Giuliani Marzia Monica; Giannelli Valentina; Pizza Maria Grazia; Rappuoli Rino; Dougan Gordon (Reprint)
AUTHOR ADDRESS: Dep. Biochem., Imperial Coll. Sci., Technol. Med., Exhibition Rd., London SW7 2AY, UK**UK
JOURNAL: Vaccine 16 (11-12): p1065-1073 July, 1998 **1998**
MEDIUM: print
ISSN: 0264-410X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Using a fixed dose of antigen, the immune response to detoxified mutants of LT-WT following **intranasal** (i.n.), subcutaneous (s.c.) and oral (i.g.) immunization has been studied. When given i.n., both LT-WT and mutant toxin, K63, generated significant **levels** of toxin-specific **IgG** in the serum, and the **levels** of IgA in **nasal** and lung lavages were greater than those induced by rLT-B. In comparison, i.g. immunization of mice with a similar quantity of either LT- WT or K63 toxin induced barely detectable **levels** of **IgG** in the sera. However, if the amount of protein used for i.g. immunization was increased tenfold, relatively good **levels** of toxin-specific **IgG** were induced in the sera by both LT-WT or K63. Low **levels** of toxin-specific IgA were also observed in intestinal washes from these mice. Western blotting of the sera, using the native toxin as an antigen, demonstrated the presence of both anti-A and anti-B subunit antibodies. Most significantly, toxin-neutralizing antibodies were induced in the serum, with the strongest activity being induced by the LT-WT, an intermediate activity induced by mutant K63 and a lower response by rLT-B. Together, these data show that ADP-ribosyltransferase is not necessary for mucosal immunogenicity of these proteins, and that the i.n. route of immunization is more effective than the i.g. route of immunization for the generation of both **systemic** (**IgG**) and mucosal (IgA) immune responses.

16/7/11 (Item 11 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0011553514 BIOSIS NO.: 199800347761
Differential kinetics and distribution of antibodies in serum and **nasal** and vaginal secretions after **nasal** and oral vaccination

of humans
AUTHOR: Rudin Anna (Reprint); Johansson Eva-Liz; Bergquist Charlotta; Holmgren Jan
AUTHOR ADDRESS: Dep. Med. Microbiol. Immunol., Goteborg Univ., Guldhedsgatgan 10A, S413 46 Goteborg, Sweden**Sweden
JOURNAL: Infection and Immunity 66 (7): p3390-3396 July, 1998 **1998**
MEDIUM: print
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Although **nasal** vaccination has emerged as an interesting alternative to **systemic** or oral vaccination, knowledge is scarce about the immune responses after such immunization in humans. In the present study, we have compared the kinetics and organ distribution of the antibody responses after **nasal** and oral vaccination. We immunized female volunteers **nasally** or orally with cholera toxin B subunit (CTB) and determined the specific antibody **levels** in serum and **nasal** and vaginal secretions, as well as the number of circulating antibody-secreting cells, before immunization and 1, 2, 3, 6, and 26 weeks thereafter. **Nasal** vaccination induced 9-fold CTB-specific **immunoglobulin** A (IgA) and 56-fold specific **IgG** antibody increases in **nasal** secretions, whereas no significant IgA increase was seen after oral vaccination. Both oral and **nasal** vaccination resulted in 5- to 6-fold CTB-specific IgA and 20- to 30-fold specific **IgG** increases in vaginal secretions. Strong serum responses to CTB were also induced by both routes of vaccination. A notable difference between **nasal** and oral vaccination was that the **nasal** route elicited a specific antibody response with a later onset but of much longer duration than did the oral route. We conclude from this study that the **nasal** route is superior to the oral route for administering at least nonliving vaccines against infections in the upper respiratory tract, whereas either oral or **nasal** vaccination might be used for eliciting antibody responses in the female genital tract.

16/7/12 (Item 12 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0011417980 BIOSIS NO.: 199800212227
Intranasal administration of a meningococcal outer membrane vesicle vaccine induces persistent local mucosal antibodies and serum antibodies with strong bactericidal activity in humans
AUTHOR: Haneberg Bjorn (Reprint); Dalseg Rolf; Wedege Elisabeth; Hoiby E Arne; Haugen Inger Lise; Oftung Fredrik; Andersen Svein Rune; Naess Lisbeth Meyer; Aase Audun; Michaelsen Terje E; Holst Johan
AUTHOR ADDRESS: Dep. Vaccinol., Natl. Inst. Public Health, P.O. Box 4404 Torshov, N-0403 Oslo, Norway**Norway
JOURNAL: Infection and Immunity 66 (4): p1334-1341 April, 1998 **1998**
MEDIUM: print
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A **nasal** vaccine, consisting of outer membrane vesicles (OMVs) from group B Neisseria meningitidis, was given to 12 volunteers in the form of **nose** drops or **nasal** spray four times at weekly intervals, with a fifth dose 5 months later. Each **nasal** dose consisted of 250 mug of protein, equivalent to 10 times the intramuscular dose that was administered twice with a 6-week interval to 11 other volunteers. All individuals given the **nasal** vaccine developed

0011010712 BIOSIS NO.: 199799644772
Intranasal vaccination of humans with recombinant cholera toxin B subunit induces systemic and local antibody responses in the upper respiratory tract and the vagina
AUTHOR: Bergquist Charlotta; Johnansson Eva-Liz; Lagergard Teresa; Holmgren Jan; Rudin Anna (Reprint)
AUTHOR ADDRESS: Dep. Med. Microbiol. Immunol., Goteborg Univ., Gudlhedsgatan 10A, S-413 46 Goteborg, Sweden**Sweden
JOURNAL: Infection and Immunity 65 (7): p2676-2684 1997 **1997**
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Forty-five volunteers were vaccinated twice **intranasally** with 10, 100, or 1,000 mu-g of cholera toxin B subunit (CTB). Blood and **nasal** and vaginal secretions were collected before and 1 week after the second vaccination from all volunteers, and the specific and total **immunoglobulin** A (IgA) and **IgG** titers were determined by enzyme-linked immunosorbent assay. Samples were also taken 6 months (n = 16) and 1 year (n = 14) after the vaccination. The 10- and 100-mu-g doses were well tolerated by the volunteers, but the 1,000-mu-g dose induced increased secretions from the **nose** and repetitive sneezings for several hours. The CTB-specific serum IgA and ***IgG*** increased 21- and 7-fold, respectively, 1 week after vaccination with the medium dose and increased 61- and 37-fold, respectively, after the high dose. In **nasal** secretions the specific IgA and **IgG** increased 2- and 6-fold after the medium dose and 2- and 20-fold after the high dose, respectively. In vaginal secretions the specific IgA and ***IgG*** increased 3- and 5-fold after the medium dose and 56- and 74-fold after the high dose, respectively. The lowest dose did not induce any significant antibody titer increases in serum or in secretions. The specific IgA and **IgG levels** in secretions were still elevated after 6 months but were decreasing 1 year after the vaccination. These results show that **intranasal** vaccination of humans with CTB induces strong systemic and mucosal antibody responses and suggest that CTB may be used as a **carrier** for antigens that induce protective immunity against systemic as well as respiratory and genital infections.

011717040 BIOSIS NO.: 199800511287
Musosal immunoadjuvant activity of recombinant Escherichia coli heat-labile enterotoxin and its B subunit: Induction of systemic **IgG** and secretory IgA responses in mice by **intranasal** immunization with influenza virus surface antigen
AUTHOR: Verweij Willem R; De Haan Lolke; Holtrop Marijke; Agsteribbe Etienne; Brands Ruud; Van Scharrenburg Guus J M; Wilschut Jan (Reprint)
AUTHOR ADDRESS: Dep. Physiological Chem., Groningen-Utrecht Inst. Drug Exploration, Univ. Groningen, Ant. Deusinglaan 1, 9713 AV Groningen, Netherlands**Netherlands
JOURNAL: Vaccine 16 (20): p2069-2076 Dec., 1998 ***1998***
MEDIUM: print
ISSN: 0264-410X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The Escherichia coli heat-labile enterotoxin (LT) is a very potent mucosal immunogen. LT also has strong adjuvant activity towards coadministered unrelated antigens and is therefore of potential interest for development of mucosal vaccines. However, despite the great demand for such mucosal vaccines, the use of LT holotoxin as an adjuvant is essentially precluded by its toxicity. LT is composed of an A subunit, carrying the toxic ADP-ribosylation activity, and a pentamer of identical B subunits, which mediates binding to ganglioside GM1, the cellular receptor for the toxin. In this paper, we demonstrate that recombinant enzymatically inactive variants of LT, including the LTB pentamer by itself, retain the immunoadjuvant activity of LT holotoxin in a murine influenza model. Mice were immunized ***intranasally*** (in.) with influenza virus subunit antigen, consisting mostly of the isolated surface glycoprotein hemagglutinin (HA), supplemented with either recombinant LTB (rLTB), a nontoxic LT mutant (E112K, with a Glu112 fwdarw Lys substitution in the A subunit), or LT holotoxin, and the induction of systemic **IgG** and local S-IgA responses was evaluated by direct enzyme-linked immunosorbent assay (ELISA). Immunization with subunit antigen alone resulted in a poor systemic **IgG** response and no detectable S-IgA. However, supplementation of the antigen with E112K or rLTB resulted in a substantial stimulation of the serum **IgG** **level** and in induction of a strong S-IgA response in the essentially the same as that of the LT holotoxin. The present results demonstrate that nontoxic variants of LT, rLTB in particular, represent promising immunoadjuvants for potential application in an i.n. influenza virus subunit vaccine. Nontoxic LT variants may also be used in i.n. vaccine formulations directed against other mucosal pathogens. In this respect, it is of interest that LT(B)-stimulated antibody responses after i.n. immunization were also observed at distant mucosal sites, including the urogenital system. This, in principle, opens the possibility to develop i.n. vaccines against sexually transmitted infectious diseases.

10226402 PMID: 1306363

Anti-infectious effect of C granulosum-derived **P40** immunomodulator given by aerosolization and ***intranasal*** instillation.

Bizzini B; Carlotti M; Fattal German M

Unite de Toxinologie Moleculaire, Institut Pasteur, Paris, France.

Biomedicine & pharmacotherapy = Biomedecine & pharmacotherapie (FRANCE) **1992**, 46 (10) p491-4, ISSN 0753-3322 Journal Code: 8213295

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

It is known that C granulosum-derived **P40** immunomodulator displays strong anti-microbial effects in mice by the intravenous route. Since microbial contamination of humans occurs in many instances via the airways, the effect of **P40** on infections was investigated when it was given ***intranasally*** or by aerosolization. In order to augment its bioavailability, **P40** was derivatized by coupling with polylysine chains (***P40*** -PL). The results showed that ***P40*** -PL exercised a significant protective effect, both by the **intranasal** route and by aerosolization on both influenza and K pneumoniae infections produced by aerosolization or ***intranasal*** instillation. Stimulation of the phagocytic capacity of alveolar macrophages by these types of treatment is likely to account for the increased resistance of mice toward microbial infections.

Record Date Created: 19930809

Record Date Completed: 19930809

DIALOG(R)File 73:EMBASE

05818137 EMBASE No: 1994234980
Humoral, mucosal, and cellular immune response to topical immunization with a subunit respiratory syncytial virus vaccine
Walsh E.E.
Dept. of Medicine, Rochester General Hospital, 1425 Portland Ave.,Rochester, NY 14621 United States
Journal of Infectious Diseases (J. INFECT. DIS.) (United States) 1994, 170/2 (345-350)
CODEN: JIDIA ISSN: 0022-1899
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

The efficacy of topical immunization with the respiratory syncytial virus (RSV) fusion (F) protein was tested in mice using cholera toxin B chain (CTB) as an adjuvant. The dose of CTB required for the adjuvant effect (as measured by local and **systemic** antibody stimulation) and protection from viral challenge was >= 5 mug. With this dose, mice immunized **intranasally** with CTB plus F protein were highly protected from viral replication in the upper and lower respiratory tract. This protection was associated with the induction of mucosal IgA and serum **IgG** and neutralizing antibody. Addition of parenteral immunization with F protein to the topical vaccination provided protection from viral challenge nearly equivalent to immunization with live RSV **intranasally**. Topical and parenteral immunization with F protein was not associated with induction of splenic cytotoxic T cells, in contrast to live virus given **intranasally**.

16/7/65 (Item 8 from file: 73)
DIALOG(R)File 73:EMBASE

05486196 EMBASE No: 1993254295
Mucosal immunity and protection after **intranasal** immunization with recombinant adenovirus expressing herpes simplex virus glycoprotein B
Gallichan W.S.; Johnson D.C.; Graham F.L.; Rosenthal K.L.
Molecular Virology/Immunology Prog., Dept. of Pathology, McMaster University Health Sciences Ctr., 1200 Main St. W.,Hamilton, Ont. L8N 3Z5 Canada
Journal of Infectious Diseases (J. INFECT. DIS.) (United States) 1993, 168/3 (622-629)
CODEN: JIDIA ISSN: 0022-1899
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

A recombinant adenovirus (Ad) expressing glycoprotein B (gB) of herpes simplex virus (HSV) type 1 (AdgB8) was evaluated as a mucosal vaccine candidate. When administered **intranasally** (inl) to C57B1/6 mice, AdgB8 induced **levels** of serum anti-HSV gB **IgG** antibodies similar to those of mice immunized intraperitoneally (ip), which neutralized both HSV-1 and -2. Mice immunized inl with AdgB8 produced secretory IgA specific for HSV gB, but mice immunized ip did not. Splenic anti-HSV cytotoxic T lymphocytes (CTL) were observed after inl and ip immunization; however, there was a time-dependent decrease in the anti-HSV CTL activity from spleens of inl immunized mice. Anti-HSV CTL were also present in the mediastinal lymph nodes after inl but not ip AdgB8 immunization. Furthermore, mice immunized inl with AdgB8 were protected against heterologous inl challenge with HSV-2, and this protection lasted longer than in ip-immunized mice. These results indicate that mucosal immunization with a recombinant adenovirus can induce mucosal and **systemic** immune responses and provide long-term protection from mucosally or sexually transmitted viruses.

had the fewest virulent organisms in their respiratory tract secretions. These results demonstrated that i.c. immunization followed by local immunization with the bacterin is most efficacious in protecting chickens against airsacculitis.

16/7/26 (Item 26 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0008714504 BIOSIS NO.: 199395016770
Mucosal delivery of herpes simplex virus vaccine
AUTHOR: Bowen J C; Alpar H O (Reprint); Phillpotts R; Brown M R W
AUTHOR ADDRESS: Pharmaceutical Sci. Inst., Dep. Pharmaceutical Sci., Aston Univ., Aston Triangle, Birmingham B4 7ET, UK**UK
JOURNAL: Research in Virology 143 (4): p269-278 **1992**
ISSN: 0923-2516
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The mucosal route for the production of mucosal and **systemic** herpes simplex virus (HSV) antibodies was investigated using HSV1 subunit vaccine administered to guinea pigs. Groups of test animals (n = 13) were dosed, **nasally** or vaginally and compared with those injected subcutaneously (s.c.). The vaccines, in aqueous or gel form, were administered 5 and 3 weeks prior to vaginal challenge with HSV2 suspension. Control infected and non-infected animals were included for comparison. Animals which were vaccinated s.c. were shown to respond to subsequent infection with HSV by the production of serum HSV-specific **IgG** (and IgA) but negligible amounts of vaginal **IgG** and IgA. Control non-infected and infected-only groups produced none and only a small amount of vaginal HSV-specific antibodies, respectively. Substantial protection against HSV2 infection of the female guinea pig genital tract was provided by s.c. immunization with HSV vaccine. Protection was evaluated in terms of the reduction histopathological lesion and clinical signs in vaccinated and control animals. The serum humoral response to **nasal** delivery in phosphate-buffered saline was comparable, and was superior for vaginal washes to that of parenteral vaccination. The **nasally** delivered free antigen gave significant (p ltoreq 0.05) reduction in the severity of the disease and higher **levels** of specific serum and vaginal **immunoglobulin** antibodies to HSV when compared with non-immunized infected-only controls, probably due to uptake of antigenically intact protein. Vaginal gel treatment slightly reduced the severity of the illness and gave higher humoral responses than those induced by vaginally delivered free antigen. Findings also indicate that these mucosal immune responses were produced at a site distant from the site of vaccination, suggesting a common immunological system.

16/7/27 (Item 27 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0008234502 BIOSIS NO.: 199293077393
PROTECTIVE LOCAL AND **SYSTEMIC** ANTIBODY RESPONSES OF SWINE EXPOSED TO AN AEROSOL OF ACTINOBACILLUS-PLEUROPNEUMONIAE SEROTYPE 1
AUTHOR: BOSSE J T (Reprint); JOHNSON R P; NEMEC M; ROSENDAL S
AUTHOR ADDRESS: DEP VETERINARY MICROBIOL IMMUNOLOGY, UNIV GUELPH, GUELPH, ONTARIO N1G 2W1**CANADA
JOURNAL: Infection and Immunity 60 (2): p479-484 **1992**
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract

0005233360 CAB Accession Number: 19812286228

Factors which can influence the efficacy of **intranasal** vaccination of the horse against tetanus.

Original Title: Untersuchungen uber Faktoren, welche die Wirksamkeit einer **intranasalen** Impfung gegen Tetanus beim Pferd beeinflussen konnen.

Hasslacher, D.

p.71

Publication Year: 1981

Publisher: Ludwig-Maximilians Universitat, Munchen.

Language: German Summary Language: English Record Type: Abstract

Document Type: Thesis

540 horses were immunized against tetanus by **intranasal** vaccination. 40 were immunized for the first time whereas the other 500 had already been vaccinated previously. Nose bleeding observed by 3 of 540 horses (0.5%) for a short time after vaccination was due to injury of the ***nasal*** mucous membrane by vaccination equipment. ***Intranasal*** vaccination was harmless in all other cases, with no signs of local or general irritation due to vaccination. The best method for **intranasal** vaccination was use of a syringe capped by a spray adapter. Vaccinating sprays with CO2 or Frigen as a propellent were inefficient. 1000 Lf ***tetanus*** ***toxoid*** (Lf equivalent to 1 IU of antitoxin) must be used for **intranasal** vaccination with a spray adapter in order to reach the same level of immunization obtained by intramuscular vaccination. ***Intranasal*** booster vaccination caused a 2.4 fold increase in ***serum*** antitoxin titre from 1:240 to 1:570 in the indirect haemagglutination assay. 59% of 250 horses that had been **intranasally** vaccinated with 1000 Lf **tetanus toxoid** in the above mentioned manner showed an elevation in antitoxin titre. In comparison: after i/m vaccination the antitoxin titre rose on the average 2.3 times from 1:400 to 1:930. 65% of the horses showed an elevation in the level of ***serum*** antitoxin. Only very small rises in antitoxin level could be reached both by i/m and **intranasal** primary vaccination of foals (up to one year of age). The highest average antitoxin titre obtained by **intranasal** vaccination was 1:36 after 3 subsequent vaccinations and 1:12 after 2 intramuscular vaccinations (determined by ELISA). Both indirect haemagglutination and ELISA can be used for detecting tetanus antitoxin. ELISA is more sensitive when **serum** samples with a low antitoxin level are to be assayed (first time vaccinations) whereas indirect haemagglutination is more sensitive when working with relatively high levels of antitoxin (revaccinations).

103 ref.